CLAIMS

1. A compound according to formula I:

$$\begin{array}{c|c}
R^1 & (R^4)_n \\
\hline
 & N-R^3 (I)
\end{array}$$

wherein

 R^1 is selected from the group consisting of hydroxy, halo, nitro, $C_{1\text{-}6}$ alkylhalo, $OC_{1\text{-}6}$ alkyl, $OC_{1\text{-}6}$ alkyl, $C_{2\text{-}6}$ alkyl, $OC_{2\text{-}6}$ alkenyl, $OC_{2\text{-}6}$ alkynyl, $C_{2\text{-}6}$ alkyl, $OC_{1\text{-}6}$ alkyl, $OC_{0\text{-}6}$ alkyl $C_{3\text{-}6}$ cycloalkyl, $OC_{0\text{-}6}$ alkyl $C_{3\text{-}6}$ cycloalkyl, $C_{0\text{-}6}$ alkylaryl, $OC_{0\text{-}6}$ alkylaryl, $C_{0\text{-}6}$ alkylaryl, $C_{0\text{-}6}$ alkylaryl, $C_{0\text{-}6}$ alkylor, $C_{0\text{-}6}$ alkyl

 R^2 is selected from the group consisting of hydrogen, hydroxy, halo, nitro, C_{1-6} alkylhalo, OC_{1-6} alkylhalo, C_{1-6} alkyl, OC_{1-6} alkyl, OC_{1-6} alkyl, OC_{2-6} alkenyl, OC_{2-6} alkenyl, C_{2-6} alkynyl, OC_{2-6} alkyllor, C_{0-6} alkyl C_{3-6} ceycloalkyl, OC_{0-6} alkylaryl, OC_{0-6} alkylaryl, CHO, $(CO)R^5$, $O(CO)R^5$, $O(CO)OR^5$, $O(CN)OR^5$, C_{1-6} alkylor, OC_{2-6} alkylor, C_{2-6} alkylor, alkylor, C_{2-6} alkylor, C_{2-6} alkylor, alkylor, C_{2-6} alkylor, C_{2-6} alkylor, alkylor,

 R^3 is selected from the group consisting of: H, C(O)OC1-6alkylhalo, C(O)OC1-6alkyl, C(O)OC2-6alkenyl, C(O)OC2-6alkynyl, C(O)OC0-6alkylC3-6cycloalkyl, C(O)OC0-6alkylaryl, C(O)OC1-6alkylOR5, C(O)OC1-6alkylCO)R5, C(O)OC1-6alkylCO2R5, C(O)OC1-6alkylCyano, C(O)OC0-6alkylNR5R6, C(O)OC1-6alkylCO)NR5R6, C(O)OC2-6alkylNR5(CO)R6, C(O)C1-6alkylNR5(CO)NR5R6, C(O)OC2-6alkylSR5, C(O)OC1-6alkylSO2R5, C(O)OC1-6alkylSO2R5, C(O)OC1-6alkylSO2NR5R6, C(O)OC1-6alkylNR5(SO2)NR5R6, C(O)OC1-6alkylNR5(SO2)NR5R6, C(O)OC1-6alkylNR5(SO2)R6, C(O)OC2-6alkylNR5(SO2)NR5R6, C(O)NR5R6, C(O)OC1-6alkylNR5(SO2)R6, C(S)OC1-6alkylNR5(SO2)NR5R6, C(O)NR5R6, C(O)OC1-6alkylNR5(SO2)NR5R6, C(O)OC1-6alkylNR5(SO2)R6, C(S)OC1-6alkylNR5(SO2)NR5R6, C(O)NR5R6, C(O)OC1-6alkylNR5(SO2)NR5R6, C(O)NR5R6, C(O)OC1-6alkylNR5(SO2)NR5R6, C(O)OC1-6Alk

 $\begin{array}{l} {}_{6}alkylhalo,\,C(S)OC_{1\text{-}6}alkyl,\,C(S)OC_{2\text{-}6}alkenyl,\,C(S)OC_{2\text{-}6}alkynyl,\,C(S)OC_{0\text{-}6}alkylC_{3\text{-}6}\\ {}_{6}cycloalkyl,\,C(S)OC_{0\text{-}6}alkylaryl,\,C(S)OC_{1\text{-}6}alkylOR^5,\,C(S)OC_{1\text{-}6}alkyl(CO)R^5,\,\\ {}_{C}(S)OC_{1\text{-}6}alkylCO_{2}R^5,\,C(S)OC_{1\text{-}6}alkylcyano,\,C(S)OC_{0\text{-}6}alkylNR^5R^6,\,C(S)OC_{1\text{-}6}\\ {}_{6}alkyl(CO)NR^5R^6,\,C(S)OC_{2\text{-}6}alkylNR^5(CO)R^6,\,C(S)C_{1\text{-}6}alkylNR^5(CO)NR^5R^6,\,\\ {}_{C}(S)OC_{2\text{-}6}alkylSR^5,\,C(S)OC_{1\text{-}6}alkyl(SO)R^5,\,C(S)OC_{1\text{-}6}alkylSO_{2}R^5,\,C(S)OC_{1\text{-}6}\\ {}_{6}alkyl(SO_{2})NR^5R^6,\,C(S)OC_{1\text{-}6}alkylNR^5(SO_{2})R^6,\,C(S)OC_{2\text{-}6}alkylNR^5(SO_{2})NR^5R^6,\,\\ {}_{C}(CO)NR^5R^6,\,and\,C(S)OC_{1\text{-}6}alkylNR^5(CO)OR^6; \end{array}$

 R^4 is selected from the group consisting of hydroxy, halo, nitro, $C_{1\text{-}6}$ alkylhalo, $OC_{1\text{-}6}$ alkylhalo, $C_{1\text{-}6}$ alkyl, $OC_{1\text{-}6}$ alkyl, $OC_{2\text{-}6}$ alkyll, $OC_{0\text{-}6}$ alkyll,

M is selected from the group consisting of =O, $(CR^5R^6)_m$ and $(CR^5R^6)_mC(O)$;

 R^5 and R^6 are independently selected from the group consisting of hydrogen, C_{1-6} alkyl, OC_{1-6} alkyl, OC_{3-7} cycloalkyl, OC_{3-7} cycloalkyl, OC_{1-6} alkylaryl, OC_{1-6} alkylaryl, aryl, and heteroaryl;

any C_{1-6} alkyl, aryl or heteroaryl defined under R^1 , R^2 , R^3 , R^4 , R^5 and R^6 may be substituted by one or more A;

A is selected from the group consisting of hydrogen, hydroxy, halo, nitro, oxo, C_{0-6} alkylcyano, C_{0-4} alkyl C_{3-6} cycloalkyl, C_{1-6} alkyl, C_{1-6} alkylhalo, OC_{1-6} alkylhalo, C_{2-6} alkenyl, C_{0-3} alkylaryl, C_{0-6} alkylor, OC_{2-6} alkylor, and a 5- or 6-membered ring containing one or more atoms independently selected from the group consisting of C, N, O and S;

m is 1, 2, or 3; n is an integer between 0 and 8, inclusive; or a pharmaceutically acceptable salt or hydrate thereof.

- 2. The compound according to claim 1, wherein n is 0.
- 3. The compound according to claim 2, wherein R^3 is selected from the group consisting of: $C(O)OC_{1\text{-}6}alkylhalo,\ C(O)OC_{1\text{-}6}alkyl,\ C(O)OC_{2\text{-}6}alkenyl,\ C(O)OC_{2\text{-}6}alkynyl,\ C(O)OC_{0\text{-}6}alkylC_{3\text{-}6}cycloalkyl,\ C(O)OC_{0\text{-}6}alkylaryl,\ C(O)OC_{1\text{-}6}alkylOR^5,\ C(O)OC_{1\text{-}6}alkylCO_2R^5,\ C(O)OC_{1\text{-}6}alkylcyano,\ C(O)OC_{0\text{-}6}alkylNR^5R^6,\ C(O)OC_{1\text{-}6}alkylCO)NR^5R^6,\ C(O)OC_{2\text{-}6}alkylNR^5(CO)R^6,\ C(O)C_{1\text{-}6}alkylNR^5(CO)NR^5R^6,\ C(O)OC_{2\text{-}6}alkylSO_2R^5,\ C(O)OC_{1\text{-}6}alkylSO_2R^5,\ C(O)OC_{1\text{-}6}alkylSO_2NR^5R^6,\ C(O)OC_{1\text{-}6}alkylNR^5(SO_2)NR^5R^6,\ C(O)OC_{1\text{-}6}alkylNR^5(SO_2)NR^5R^6,\ C(O)OC_{1\text{-}6}alkylNR^5(SO_2)NR^5R^6,\ C(O)OC_{1\text{-}6}alkylNR^5(CO)OR^6.$
- 4. The compound according to claim 3, wherein R^3 is selected from the group consisting of $C(O)OC_{1-6}$ alkyl, $C(O)OC_{0-6}$ alkylaryl, $C(O)OC_{1-6}$ alkyl OR^5 , and $CO)NR^5R^6$.
- 5. The compound according to claim 2, wherein R² is hydrogen or fluoro.
- 6. The compound according to claim 5, wherein M is CR⁵R⁶.
- 7. The compound according to claim 6, wherein R⁶ in M is H.
- 8. The compound according to claim 7, wherein R^5 in M is selected from hydrogen, C_{1-6} alkyl, C_{3-7} cycloalkyl, C_{1-6} alkylaryl, aryl, and heteroaryl.
- 9. The compound according to claim 8, wherein R^5 is C_{1-6} alkyl.
- 10. The compound according to claim 8, wherein R⁵ is C₃₋₇cycloalkyl.
- 11. The compound according to claim 8, wherein R⁵ is heteroaryl.
- 12. The compound according to claim 11, wherein heteroaryl is selected from the group consisting of 2-, 3-, and 4-pyridyl; 2- and 3-thienyl; and 2- and 3-furanyl.
- 13. The compound according to claim 8, wherein R⁵ is aryl.
- 14. The compound according to claim 13, wherein aryl is phenyl.
- 15. The compound according to claim 1, selected from the group consisting of: 4-[3-(3-Chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,

- 4-(3-Phenyl-prop-2-ynyl)-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Cyano-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-(3-m-Tolyl-prop-2-ynyl)-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Methoxy-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(5-Cyano-2-fluoro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(2-Fluoro-5-methyl-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(5-Chloro-2-fluoro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-methyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-isopropyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester.
- 4-[1-tert-Butyl-3-(3-chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-phenyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[1-(3-Chloro-phenylethynyl)-butyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[1-(3-Chloro-phenylethynyl)-3-methyl-butyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[1-Benzyloxymethyl-3-(3-chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-cyclopropyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[1-(3-Chloro-phenylethynyl)-pentyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-thiophen-2-yl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-thiophen-3-yl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-furan-2-yl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid tert-butyl ester,
- 1-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid isopropyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid propyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid isobutyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid butyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid 2,2-dimethyl-propyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid pentyl ester,

4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid 2-methoxy-ethyl ester,

- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid phenyl ester,
- 4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid benzyl ester,
- 4-[3-(3-Chloro-phenyl)-1-pyridin-3-yl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-(2,4-difluoro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-(2-methoxy-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-(2-chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-o-tolyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-m-tolyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-(6-methoxy-pyridin-3-yl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester,
- 4-[3-(3-Chloro-phenyl)-1-(2-chloro-pyridin-3-yl)-prop-2-ynyl]-piperazine-1-car-boxylic acid ethyl ester,
- Ethyl 4-[3-(5-chloro-2-fluorophenyl)-1-ethylprop-2-yn-1-yl]piperazine-1-carboxylate
- Ethyl 4-[3-(3-chlorophenyl)-1-(5-methyl-2-furyl)prop-2-yn-1-yl]piperazine-1-carboxylate
- Ethyl 4-{3-(3-chlorophenyl)-1-[5-(methoxycarbonyl)-2-furyl]prop-2-yn-1-yl}piperazine-1-carboxylate
- 2,2,2-Trifluoroethyl 4-[3-(3-chlorophenyl)-1-(2-furyl)prop-2-yn-1-yl]piperazine-1-carboxylate
- Ethyl 4-{3-(3-chlorophenyl)-1-[5-(hydroxymethyl)-2-furyl]prop-2-yn-1-yl}piperazine-1-carboxylate
- $Ethyl\ (3S)-4-[(1R)-3-(3-chlorophenyl)-1-(2-furyl)prop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate$
- Ethyl (3S)-4-[(1S)-3-(3-chlorophenyl)-1-(2-furyl)prop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate
- Ethyl (3R)-4-[(1S)-3-(3-chlorophenyl)-1-ethylprop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate

Ethyl (3R)-4-[(1R)-3-(3-chlorophenyl)-1-(2-furyl)prop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate

Ethyl (3R)-4-[(1R)-3-(3-chlorophenyl)-1-ethylprop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate

Ethyl (3S)-4-[(1S)-3-(3-chlorophenyl)-1-ethylprop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate

 $Ethyl\ (3S)-4-[(1R)-3-(3-chlorophenyl)-1-methylprop-2-yn-1-yl]-3-methylpiperazine-1-carboxylate$

4-[3-(3-Chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid tert-butyl ester

4-[1-(Tert-Butoxycarbonylamino-methyl)-3-(3-chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester

4-[3-(3-Chloro-phenyl)-1-triisopropylsilyloxymethyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester

Ethyl 4-[3-(3-chlorophenyl)-1-(ethoxymethyl)prop-2-yn-1-yl]piperazine-1-carboxylate

4-[1-Aminomethyl)-3-(3-chloro-phenyl)-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester

4-[3-(3-Chloro-phenyl)-1-hydroxymethyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester

4-[3-(3-Chloro-phenyl)-1-methoxymethyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester

4-(3-Phenyl-propynoyl)-piperazine-1-carboxylic acid ethyl ester

Ethyl 4-[3-(3-Chloro-phenyl)-1,1-dimethyl-prop-2-ynyl]-piperazine-1-carboxylic acid ethyl ester

4-[3-(3-Chloro-phenyl)-1-ethyl-prop-2-ynyl]-piperazine-1-carboxylic acid methyl ester

4-[3-(3-Chloro-phenyl)-prop-2-ynyl]-piperazine-1-caroxylic acid 2-methoxyethyl ester, and pharmaceutically acceptable salts or hydrates thereof.

16. A pharmaceutical composition comprising as active ingredient a therapeutically effective amount of the compound according to any one of claims 1 to 15, in association with one or more pharmaceutically acceptable diluents, excipients and/or inert carriers.

- 17. The pharmaceutical composition according to claim 16, for use in the treatment of mGluR 5 mediated disorders.
- 18. The compound according to any one of claims 1 to 15, for use in therapy.
- 19. The compound according to any one of claims 1 to 15, for use in treatment of mGluR 5 mediated disorders.
- 20. Use of the compound according to any one of claims 1 to 15, in the manufacture of a medicament for the treatment of mGluR 5 mediated disorders.
- 21. A method of treatment of mGluR 5 mediated disorders, comprising administering to a mammal a therapeutically effective amount of the compound according to any one of claims 1 to 15.
- 22. The method according to claim 21, wherein the mammal is a human.
- 23. The method according to claim 21, wherein the disorders are neurological disorders.
- 24. The method according to claim 21, wherein the disorders are psychiatric disorders.
- 25. The method according to claim 21, wherein the disorders are chronic and acute pain disorders.
- 26. The method according to claim 21, wherein the disorders are gastrointestinal disorders.
- 27. A method for inhibiting activation of mGluR 5 receptors, comprising treating a cell containing said receptor with an effective amount of the compound according to claim 1.